

**REMARKS**

Claims 1 and 4-14 are pending in the application with claim 1 in independent form. Claims 2 and 3 were previously cancelled. Claims 4-14 stand withdrawn. No claims are cancelled, withdrawn or amended in the instant Response.

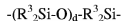
Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,287,891 to Rautschek (the '891 patent). Specifically, the Examiner contends that the '891 patent discloses a generic formula IV which teaches block copolymer A as claimed in the present application. Generic formula IV is the following:



in which n is greater than or equal to 1, preferably 1-20, and A has the general formula:



where  $R^1$  independently of one another is either hydrogen, alkyl, aralkyl, aryl, or an  $R^2-C(O)-$  radical, and  $R^2$  is a substituted or unsubstituted alkyl radical having from 1 to 8 carbon atoms, m is an integer between 3 and 8, and a, b, and c independently of one another are integers between 0 and 200, with the proviso that the sum (a+b+c) is from 2 to 300. In addition, B has the general formula:

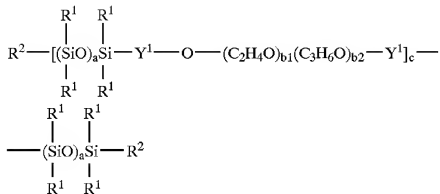


where  $R^3$  independently of one another are substituted and/or unsubstituted, saturated and/or unsaturated hydrocarbon radicals having from 1 to 20 carbon atoms, and d is an integer between 1 and 400. Further, C has the general formula:

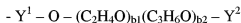


with each subscript being defined above.

In contrast, the present application claims a block copolymer (A) represented by the following general formula:



wherein  $\text{R}^1$  independently designates univalent hydrocarbon groups free of aliphatic unsaturation, hydroxyl groups, or alkoxy groups;  $\text{Y}^1$  designates a bivalent organic group;  $\text{R}^2$  independently designates hydrogen atoms, hydroxyl groups, substituted or unsubstituted univalent hydrocarbon groups, alkoxy groups, or groups represented by the following formula:



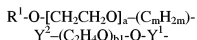
wherein  $\text{Y}^2$  is a hydrogen atom or a substituted or unsubstituted univalent hydrocarbon group; "a" is 1 or a greater integer; "b1" is 1 or a greater integer; "b2" is 0, 1 or a greater integer; and "c" is 1 or a greater integer.

In the previously filed Amendment, the Applicants noted that the Examiner has set forth a complex selection of optional moieties and particular substituents from the potentially infinite number of possibilities disclosed in the general formula of the '891 patent. The

Examiner disagreed. However, the Applicants note that it took the Examiner nearly five pages to pick and choose from the potentially infinite number of possibilities disclosed by the general formula of the '891 patent to arrive at presently claimed copolymer (A). The Examiner stated throughout these five pages that it would be obvious to optimize the selection of substitutes, the number of times each block is repeated, the molecular weight, and the ratios of blocks to form the copolymer based on the intended use of the copolymer. However, the Examiner has yet again failed to set forth any reason whatsoever why one of skill in the art would optimize the general formula taught by the '891 patent by picking and choosing from the potentially infinite number of potential copolymers encompassed by the general formula of the '891 patent for a copolymer for use in a cosmetic composition, when the general formula disclosed by the '891 patent is directed toward an antifoam agent. Though the Applicants appreciate that the intended use of the claimed copolymer (A) is not a limitation of the claims, the Applicants submit that the intended use is what drives one of skill in the art to optimize a compound, and the Examiner has not set forth any reason why one of skill in the art would have a reason to optimize the general formula of the '891 patent to arrive at the presently claimed copolymer (A) for a cosmetic composition.

Moreover, the Examiner has improperly correlated elected species  $R^2$  in the subject application to subunit A of the general formula disclosed by the '891 patent. In particular, the Examiner contends that, when the "b" and "c" integers of the A subunit are 0, subunit A of the '891 patent corresponds to the elected species  $R^2$  in claim 1 of the subject application. Elected species  $R^2$  in the subject application is represented by the formula  $-Y^1-O-$

$(C_2H_4O)_{b1}(C_3H_6O)_{b2}-Y^2$  where  $b_2$  was previously elected as 0, i.e., as absent,  $Y^1$  designates a bivalent organic group, and  $Y^2$  is a hydrogen atom or a substituted or unsubstituted univalent hydrocarbon group. Conversely, when the “b” and “c” integers of subunit A of the ‘891 patent are 0, subunit A is represented by the formula:  $R^1-O-[CH_2CH_2O]_a-(C_mH_{2m})-$ . In this instance, the moiety  $-(C_mH_{2m})-$  is bivalent and bonded to subunit (BC) in the general formula. The Applicants respectfully note that subunit A of the ‘891 patent is written in the opposite order as the elected species  $R^2$  of the subject application, in which the first moiety, i.e.,  $Y^1$ , is bivalent. Thus, the Examiner has misinterpreted the order of moieties present in subunit A of the ‘891 patent relative to elected species  $R^2$  of the subject application. Specifically, if subunit A of the ‘891 patent and the elected species  $R^2$  of the subject application were written in the same order such that the moiety which is univalent is written first, the following general formulas result (with subunit A of the ‘891 patent first and elected species  $R^2$  of the subject application second):



As clearly illustrated above, the position of the oxygen atom and the  $C_2H_4O$  moiety in subunit A of the ‘891 patent and elected species  $R^2$  of the subject application are reversed. As such, contrary to the Examiner’s contention, the general formula of the ‘891 patent fails to teach the elected species  $R^2$  of the subject application. For the purposes of keeping this response succinct, the Applicants also note that the same is true for claimed copolymer (B), i.e., that the general formula of the ‘891 patent fails to teach claimed copolymer (B) for the same reasons as set forth above for claimed copolymer (A).

Notwithstanding the above, the Applicants also respectfully submit that the Examiner has not properly established a *prima facie* case of obviousness of independent claims 1. Recent case law, in particular *Takeda Chemical Industries Ltd. v. Alphapharm Pty. Ltd.*, 492 F.3d 1350 (Fed. Cir. 2007) and *Eisai Co. v. Dr. Reddy's Laboratories Ltd.*, 487 USPQ2d 1452 (Fed. Cir. 2008), has provided useful insight into how a *prima facie* case of obviousness of chemical inventions can properly be established in the wake of the Supreme Court's decision in *KSR International Co. v. Teleflex Inc.* In *Takeda* and *Eisai*, the Federal Circuit applied the *KSR* decision in the context of chemical applications. These decisions set out a two-step process for establishing a *prima facie* case of obviousness that is consistent with the Supreme Court's guidance in *KSR*. The two-step process includes a first step of identifying a prior art "lead compound". In the second step, after the lead compound is identified, the obviousness analysis turns on what might lead a person of ordinary skill in the art to modify the lead compound to create the claimed compound. *Takeda*, 492 F.3d at 1357. Further, to properly establish *prima facie* obviousness, reasons must be set forth, based on what was known at the time of the invention, to perform the chemical modifications necessary to achieve the claimed compound. *Takeda*, 492 F.3d at 1363.

The Federal Circuit, in *Eisai*, adopted the "lead compound" analysis, stating "[o]bviousness based on structural similarity thus can be proved by identification of some motivation that would have led one of ordinary skill in the art to select and then modify a known compound (i.e., a lead compound) in a particular way to achieve the claimed compound." *Eisai*, 487 USPQ at 1455 (emphasis added). In *Eisai*, the lead compound was

chosen because it was unexpectedly superior to other prior art compounds. See *Eisai*, 487 USPQ2d at 1456 (explaining that the lead compound was twenty times more effective than other prior art compounds in an activity assay). The superior activity of the chosen “lead compound” in *Eisai* was believed to be due to a particular substituent group that would have to be changed to arrive at the claimed compound. See *Eisai*, 487 USPQ2d at 1456. Because the record did not contain any reasons that a skilled artisan would have to modify the substituent, the claim at issue was held to be non-obvious. See *Eisai*, 487 USPQ2d at 1457.

Notwithstanding the two-step process advanced by *Takeda* and *Eisai*, the Applicants recognize that *KSR* clearly dismissed rigid application of any particular tests for obviousness analyses. As succinctly summarized in MPEP 2141(II.), the ultimate focus when making a determination of obviousness should be on what a person of ordinary skill in the pertinent art would have known at the time of the invention, and on what such a person would have reasonably expected to have been able to do in view of that knowledge. However, the analyses applied by the Federal Circuit in *Takeda* and *Eisai* clearly illustrate the manner in which a proper obviousness analysis of a chemical invention is performed including the level of specificity that is required on the part of the Examiner to adequately reconstruct how one of skill in the art would have been taught to transition from a lead compound to a claimed compound. Thus, while the Applicants recognize that *Takeda* and *Eisai* do not establish rigid tests for formulating a *prima facie* case of obviousness, any alternatives to the two-part process advanced by *Takeda* and *Eisai* must involve a commensurate level of analysis to

properly reconstruct how one of skill in the art would have arrived at a claimed chemical invention based upon the knowledge available at the time of the chemical invention at issue.

The analyses performed in *Takeda* and *Eisai* have applicability to the instant claims in view of the subject matter of the instant claims and in view of the art relied upon by the Examiner. Proper application of the two-part process advanced by *Takeda* and *Eisai* illustrates the non-obviousness of the instant invention in view of the prior art relied upon by the Examiner to establish the instant rejection. Assuming that the Examiner has chosen the general formula taught by the '891 patent as the lead compound for purposes of commencing the obviousness analysis of the instantly claimed copolymer (A), the analysis turns to what might lead a person of ordinary skill in the art to modify the lead compound to create the claimed compound and what teachings exist to suggest to such person of skill in the art how to make such a modification, if desired.

As set forth above, the Examiner has not asserted any reason whatsoever why one of skill in the art would pick and choose from the potentially infinite number of copolymers encompassed by the general formula of the '891 patent, which is taught as an antifoam agent, to arrive at the presently claimed copolymer for a cosmetic composition, especially in view of the fact the general formula relied upon by the Examiner and taught by the '891 patent fails to teach the elected species R<sup>2</sup> as claimed in the subject application. The Examiner continues to argue that the fact the claimed copolymer is for a cosmetic composition does not have any patentable weight. However, the Examiner fails to appreciate the distinction between a claim limitation and an end use of a particular product which provides the

motivations for optimization. Clearly, the fact that the '891 patent teaches antifoam agents and that the general formula may be optimized for that purpose in no way provides any reason for one of skill in the art to pick and choose from the potentially infinite number of copolymers encompassed by the general formula of the '891 patent to arrive at the presently claimed copolymer for a cosmetic composition. The ultimate utility of the presently claimed copolymer guides the reasons for which a particular compound is optimized, and without any suggestion whatsoever of the general formula being suitable for cosmetic compositions, the Examiner has failed to provide any reason for optimizing the general formula disclosed in the '891 patent and has not set forth a proper *prima facie* case of obviousness.

In view of the foregoing, the Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness of the instantly claimed invention, through application of the two-part process advanced by *Takeda* and *Eisai*, in view of the teachings the '891 patent, especially in view of the failure of the '891 patent to teach the elected species R<sup>2</sup> as claimed in the subject application.

In view of the foregoing, the Applicants respectfully submit that claim 1 is both novel and non-obvious over the prior art including over the '891 patent. As such, the Applicants submit that the claims are in condition for allowance and respectfully request such allowance. In addition, because the Examiner has improperly correlated elected species R<sup>2</sup> in the subject application to subunit A of the '891 patent, the Applicants also request rejoinder of withdrawn claims 4-14 because the Examiner's original reason for withdrawing these claims, i.e., an *a posteriori* lack of unity, is no longer applicable in view of the fact that claimed copolymer (A) is



novel and nonobvious itself. While it is believed that no additional fees are presently due, the Commissioner is authorized to charge the Deposit Account No. 08-2789, in the name of Howard & Howard Attorneys PLLC for any fees or credit the account for any overpayment.

**Respectfully submitted,**

**HOWARD & HOWARD ATTORNEYS PLLC**

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Date

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